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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,874	10/26/2000	Yoshiaki Umehara	N45-127803M/MI	2977

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EXAMINER

BURCH, MELODY M

ART UNIT

PAPER NUMBER

3613

DATE MAILED: 03/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/695,874

Applicant(s)

UMEHARA ET AL.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/11/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II directed to claims 6-16 in Paper No. 6 is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "cavity" first claimed in claim 6 line 5 from the bottom of the claim must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 9 and 12 recite the same limitation.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 6. The phrase "a caliper body" in line 6 from the bottom of the claim is indefinite. It is unclear to the Examiner whether the "caliper body" in line 6 from the bottom of the claim is different or the same as that initially claimed in line 1 of the claim.

Re: claims 7 and 8. Claims 7 and 8 recite the limitation "the thick-walled connection" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Re: claim 15. The phrase "disc rotor" in line 6 from the bottom of the claim is indefinite. It is unclear to the Examiner whether the "disc rotor" in line 6 from the bottom of the claim is different or the same as that claimed in line 4 of the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6, 9, and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emmons in view of Takasaki et al. Emmons shows in figures 1, 2, and 6 a caliper body 11 of a vehicular disc brake to be made by a casting method as

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disclose in col. 3 line 30 having a pair of frictional pads disposed opposite to each other with a disc rotor 13 held there between, the caliper body including a cylinder 53 disposed on one side of the disc rotor, a reaction pawl 29 disposed on the other side of the disc rotor, and a bridge 27 for coupling the cylinder and the reaction pawl at the outer peripheral side of the disc rotor, the caliper body comprising: a union hole 43 formed at the bottom portion of the cylinder of the caliper body and a cavity disposed with the union hole. Takasaki et al. teach in figure 2c a gravity casting process of a body having a union hole in the area of element number 5 as a sprue for molding a body with a base material or aluminum alloy 9 wherein the body is molded with a cavity disposed with the union hole, while the side of molding the bottom portion of a cylinder 1 is disposed in a vertically upper part of the cavity and also the side of molding the other side is disposed in a vertically lower part of the cavity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the casting method of Emmons so as to construct the caliper body of Emmons using a casting process in which the union hole 43 is used as a sprue and the side of molding the bottom portion of the cylinder 53 is disposed in a vertically upper part and the side of molding the reaction pawl is in a vertically lower part, in view of the teachings of Takasaki et al., in order to provide an alternate means of fabricating the caliper body as gravity casting of caliper bodies is a well known process in the brake art.

8. Claims 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emmons in view of Takasaki et al. as applied to claim 6 above, and further in view of Yamaguchi et al. Yamaguchi et al. teach in col. 1 lines 26-29 the

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relationship between volume and the presence of sink marks in metal casting processes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the casting of the caliper of Emmons to have taken into account the ratio of volumes of the different portions of the molded body, in view of the teachings of Yamaguchi et al., in order to provide a means of reducing the number of sink marks in the finished product. Examiner notes it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized optimal ratio of volume ranges of the different portions of the molded caliper body as best determined by routine experimentation in order to provide the minimum amount of sink marks.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents: 4705093 to Ogino teach the use of gravity casting for making brake calipers, 5263531 to Drury et al. and 4804035 to Murai et al. teach the gravity casting technique, 5558183 to Way teaches the casting of brake calipers, 4483809 to Ando et al. and 5424112 to Kataoka et al. teach the use of ratios and sink marks, and US Patent 5887684 to Doll et al., Japanese Patents: JP835530 and JP2000-161398 teach the use of brake calipers having a union hole on the cylinder side of the caliper body.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 703-308-2089. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb 3/13/02
mmb
March 13, 2002



PAUL N. DICKSON
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